

APPENDIX

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What is claimed is:

1. A method of immobilizing biomolecules on a surface of an array substrate, wherein the array substrate comprises an inorganic material, comprising:

providing the array substrate having a first surface including a functional group for non-covalent attachment to a biomolecule;

contacting at least a portion of the first surface with a reducing agent;

attaching a biomolecule to the functional group.
2. The method of claim 1, wherein the reducing agent includes a hydride.
3. The method of claim 1, wherein the reducing agent includes a borohydride.
4. The method of claim 3, wherein the borohydride includes sodium borohydride.
5. The method of claim 4, wherein the sodium borohydride is in a solution at a concentration ranging from 0.01% to 1% by volume.
6. An array substrate made in accordance with the method of claim 2.
7. An array substrate made in accordance with the method of claim 5.
24. The method of claim 1, wherein the array substrate is coated with an amino-silane.
25. The method of claim 24, wherein the amino-silane includes gamma-amino-propyl-silane.
26. The method of claim 3, wherein the sodium borohydride is in a solution at a concentration ranging from 0.2% to 0.3% by volume.
27. The method of claim 1, wherein the reducing agent includes sodium cyanoborohydride, copper sulfate, or hydrogen.
28. The method of claim 1, wherein the array substrate comprises a microarray.

30. A method of immobilizing biomolecules on a surface of a substrate comprising:
providing a substrate having a first surface including a functional group for non-covalent attachment to a biomolecule, wherein the substrate comprises an inorganic material;
contacting at least a portion of the first surface with a reducing agent;
attaching a biomolecule to the functional group.
31. The method of claim 30, wherein the inorganic material is a metal, a semiconductor material, a glass, or a ceramic material.
32. The method of claim 31, wherein the glass or ceramic material is quartz, glass, porcelain, alkaline earth aluminoborosilicate glass, or a mixed oxide.
33. The method of claim 30, wherein the substrate is a glass slide.
34. The method of claim 30, wherein the reducing agent includes sodium borohydride.
35. A substrate made in accordance with the method of claim 30.
36. A method of immobilizing biomolecules on a surface of an array substrate, wherein the array substrate comprises an organic material, wherein the organic material comprises a polyester, a polyvinylchloride, a polyvinylidene fluoride, a polytetrafluoroethylene, a polycarbonate, a polyamide, a poly(meth)acrylate, a polystyrene, a polyethylene, or a ethylene/vinyl acetate copolymer, comprising:
providing the array substrate having a first surface including a functional group for non-covalent attachment to a biomolecule;
contacting at least a portion of the first surface with a reducing agent;
attaching a biomolecule to the functional group.